ACNE VULGARIS

A Failure to Demonstrate a Relation to Staphylococcic Infection[1]

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Numerous authors have discussed the relation of acne to staphylococcic infection, both focal and local. Although an association with focal infection has not been generally accepted, the staphylococcus has been repeatedly demonstrated in the papules and pustules of acne. Because of these findings staphylococcus vaccine, alone or mixed with acne bacillus vaccine, has been used extensively in the treatment of acne. If such therapy is rational, one must assume (1) that there is hypersensitivity to the staphylococcus and (2) that the use of vaccine results in desensitization. Since the usual routine vaccine therapy might not be expected to result in desensitization in most cases, I proposed to determine the degree of hypersensitivity to the staphylococcus in patients with acne and after treatment to retest the patients to see whether clinical improvement was associated with desensitization. The first step was the application of an intradermal test with staphylococcus toxoid in a series of patients with and without acne. The results of this investigation suggest that staphylococcus toxoid is unsuitable for use in the treatment of acne.

Three hundred and nineteen students undergoing a physical examination on admission to the University of Minnesota were subjected to an intracutaneous test using 0.1 cc. of a 1:10 dilution

[1] From the services of Dr. H. E. Michelson, Director of the Division of Dermatology, and Dr. Ruth Boynton, Director of Student Health Service, University of Minnesota.

of Lederle's staphylococcus toxoid #1. The reaction was observed at 48 hours and was recorded as positive, negative or doubtful. Hypersensitivity to the toxoid was no more common among those with acne than among normal individuals of the same age. Positive reactions were more common among girls (35%) than among boys (17%). Though there were more positive reactions among the boys with acne than among the normal boys, the difference is not great enough to be statistically significant.

	POSITIVE	NEGATIVE	DOUBTFUL	TOTAL
Girls				
Acne	14 (34%)	24 (59%)	3 (7%)	41
No acne	42 (36%)	70 (58%)	7 (6%)	120
Total				161
Boys				
Acne	12 (26%)*	33 (72%)	1 (2%)	46
No acne	15 (13%)*	94 (84%)	3 (3%)	112
Total				158

* $\frac{\text{Diff.}}{\text{P.E. diff.}} = \frac{12.7}{4.9} = 2.6$ (not significant).

The records of these students were examined for evidence of demonstrable focal infection. As in a previous study (1) focal infection was found to be more common among boys than among girls but it was not significantly more common in the presence of acne than in its absence.

	INFECTION	NO INFECTION	TOTAL
Girls			
Acne	8 (20%)	33 (81%)	41
No acne	24 (20%)	95 (80%)	119
Boys			
Acne	20 (44%)*	25 (56%)	45
No acne	38 (34%)*	74 (66%)	112

* $\frac{\text{Diff.}}{\text{P.E. diff.}} = \frac{10.5}{5.8} = 1.8$ (not significant).

Infection other than acne was only slightly more common among those having positive skin tests than among those having negative skin tests. There is thus some doubt as to the value of skin tests with toxoid as an index of staphylococcic sensitivity.

SUMMARY

1. Intradermal tests fail to demonstrate hypersensitivity to staphylococcus toxoid in patients with acne.

2. Focal infection is more common among University boys than girls but is not significantly associated with the presence of acne.

(1) A Clinical Study of Acne in University Students: J. A. M. A. **113**: 1792–1795, November 11, 1939.